

down to the rowing seat, enable the Aleutian in his one-holed *baidurka* to bid defiance to the fiercest storm and roughest sea. Unlike their neighbours, the Kamtschadales, who, in their aversion to come in contact with a corpse, throw their dead to their dogs to be devoured and removed from sight, the Aleutians devote much time and care to the preservation of the body after death. This they do so effectually that they can keep the corpse in their dwellings for more than a fortnight without causing injury or annoyance to the living, while long after death the features and external appearance of the deceased remain unchanged. Dr. Erman supplies us with many valuable additions to our knowledge of the social habits, taste for ornamentation, traditional lore, language, &c., of the Aleutians. In counting the Aleutian employs 20 as his highest numeral, making all larger quantities dependent upon that number; thus, 40, 60, &c., are respectively 2, 3, &c., twenties. —In the second paper of the *Zeitschrift*, Dr. Robert Hartmann continues his careful summary of the remains of Swiss Lacustrine dwellings, passing in review the principal mammals represented in the deposits, and entering fully into the often-discussed question whether the diluvial Cave bear (*Ursus spelæus*), is identical in species with our common bear (*U. arctos*) or whether and to what extent it differs from it. Dr. Hartmann seems disposed in this inquiry to regard the question of identity as possessing strong claims to probability, although there may not be sufficient ground at present to answer it affirmatively. —“The Nirvana and Buddhistic Morality” forms the title of a very comprehensive paper by A. Bastian, which treats very fully of the principles on which the faith of Buddha is based, the ideas underlying the various forms which it has assumed, and the special phases of human thoughts and feelings to which it more particularly addresses itself. —In a paper by G. Rohlf, entitled “Henry Noël, of Bagerni,” the writer gives an account of the kingdom of Bagerni, which is situated on the N. E. of Lake Tsad, in Central Africa. The Bagerni people are a pure Ethiopian race, who, in point of moral and intellectual capacity, may be said to form the link between the most highly-developed negro kingdoms, and the numerous small negro states, lying to the S. of them, of which we do not even know the names. The King and Court of Bagerni, after a temporary adhesion to Islamism, have relapsed into their old Fetish worship, in which trees appear to form the principal objects of adoration. The practice of taking sisters and daughters in marriage prevails in the reigning family; but, while the rich indulge extensively in polygamy, poor men take only one wife. —Dr. Behrmann, of Dresden, gives a *résumé* of an official paper by the Assistant-Resident, Herr J. Riedel, of Batavia, on the geographical, topographical, and geological character of the districts of Holontalo, Limeto, Bone, Boalemo, and Kattingola or Andagile in the Celebean Isthmus of the Eastern Archipelago. To this is appended much useful information in regard to the statistical, historical, and social condition of these countries, from which, however, we are not led to form a favourable opinion of the character, either of the Aborigines or of the Chinese and other foreign settlers. There are different grades of nobility, and till lately slavery and the slave-trade were allowed. Opium is undermining the health and vigour of the upper classes, and the poor are sunk in misery in the midst of an abundant vegetation, and with numerous sources of wealth around them; the mountains and river beds being rich in minerals. On the banks of the river Lonoco lumps of gold have from time to time been found as large as a hen's egg. —The last paper in this number of the *Zeitschrift* that we can notice is one by Herr Neumayer on the intellectual and moral qualities of the native Australians.

THE *American Journal of Science and Arts* for October. The first paper in this number is “On the Connecticut River Valley Glacier, and other examples of Glacier Movement along the Valleys of New England,” by James D. Dana. In former papers by the author he has pointed out the existence of a Connecticut valley glacier in the glacial era, understanding by this expression that the under part of the great continental glacier, lying in the Connecticut valley, moved in the same direction. In the present paper the evidence with regard to this movement is gone into more fully, and further evidence is given to show that other large valleys of Central and Western New England had, in the same sense, their valley glaciers, that is the valleys determined the direction of the ice that lay within them. —Mr. R. Pumpelly follows with a second contribution “On the Lagergenesis and Derivation of Copper and its Associates on Lake Superior.” He gives a number of observations as to the minerals

occurring with copper in various mines. In many of the cases in which calcite crystals are found enclosing copper, it is difficult to distinguish as to the relative ages of the two. The author has, however, conclusive proof that each of the following cases occur:—(1) that the copper was present before the calcite began to form and became enclosed in the growing crystal; (2) the crystal of calcite was partly formed, then became incrustated with copper, and was finished by a new growth of calcite over the metallic film; and (3) the copper has entered the calcite crystal since its growth was finished. —A valuable paper follows, “On photographing Histological Preparations by Sunlight,” by J. J. Woodward. The arrangement which is found most suitable is to place the microscope at the window of the dark room, the body being horizontal, the achromatic condenser is then illuminated by a solar pencil, which is reflected from a heliostat on to a movable mirror. Between this mirror and the achromatic condenser there is placed a 2-inch lens of ten inches focal length, at such a distance that the solar rays are brought to a focus, and begin again to diverge before they reach the achromatic condenser. When a photograph is to be taken, a cell containing ammoniasulphate of copper is placed between the lens and condenser, working with a power of 500 diameters; the time of exposure was but a fraction of a second. By allowing the solar rays to come to a focus before reaching the achromatic condenser, the heat rays may be separated from the light rays by so adjusting the condenser as to bring the light rays to a focus, while the heat-rays, after passing the second lens, became parallel, or even divergent according to the position of the achromatic condenser. The author finds that a right-angled prism may be used instead of the heliostat, and in working with low powers a piece of plain unsilvered plate-glass is sufficient instead of the mirror. —The concluding original paper in this number is “On the Discovery of a New Planet,” by Dr. Peters, which will probably receive the number 116 of the asteroid group. The elements of the 114th asteroid have been computed, and are given, which show that this planet is not so small as was supposed. It is found to be now in the remotest part of its orbit, near its aphelion.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, November 16. — General Sir Edward Sabine, K.C.B., president, in the chair.

“Contributions to the History of the Opium Alkaloids.” — Part III. By C. R. A. Wright, D.Sc.

“On a Periodic Change of the Elements of the Force of Terrestrial Magnetism discovered by Prof. Hornstein.”

“Corrections and Additions to the Memoir on the Theory of Reciprocal Surfaces, Phil. Trans. vol. clix. (1869).” By Prof. Cayley, F.R.S.

“Corrections to the Computed Lengths of Waves of Light published in the Philosophical Transactions of the year 1868.” By George B. Airy, C.B., Astronomer Royal. The author, after adverting to the process by which in a former paper he had attempted the computation of the lengths of waves of light, for the entire series measured in the solar spectrum by Kirchhoff, from a limited number of measured wave-lengths, and to the discordances between the results of these computations and the actual measure of numerous wave-lengths to which he subsequently had access, calls attention to his remark that means existed for giving accuracy to the whole. The object of the present paper is so to use these means as to produce a table of corrections applicable through the entire range of Kirchhoff's lines, and actually to apply the corrections to those computed wave-lengths which relate to spectral lines produced by the atmosphere and by many metals. Adopting as foundation the comparisons with Angström's and Ditscheiner's measures given in the former paper, and laying these down graphically, the author remarks that in some parts of the spectrum the agreement of the two experimenters is very close, that in some parts they are irreconcilable, and that in one part (where they agree) there is a peculiarity which leads to the supposition that some important change was made in Kirchhoff's adjustments. He then explains the considerations on which he has drawn a correction-curve, whose ordinates are to give the corrections applicable to his former computed numbers. A

general table of corrections is then given, and this is followed by tables of the lengths of the light-waves for the air and metals as corrected by the quantities deduced from that general table. The author remarks that he has not yet succeeded in discovering any relation among the wave-lengths for the various lines given by any one metal, &c., which can suggest any mechanical explanation of their origin.

Zoological Society, November 21.—Prof. Flower, F.R.S., V.P., in the chair. Mr. Sclater exhibited and made remarks on a fine skin of *Ateles variegatus* Wagner (*A. bartletti* Gray) which had been received in a collection from Oyapok, on the eastern limits of Cayenne, being a new locality for this species.—A communication was read from Prof. Owen, F.R.S., containing the third of a series of memoirs on the osteology of the Marsupials. In this memoir Prof. Owen entered at full length into the modifications observable in the cranium of the three known species of Wombats (*Phascolomys*).—Dr. Günther, F.R.S., read a report on several important collection of Fishes which had been recently obtained for the British Museum collection. Amongst them were many new forms from the Pacific, obtained through the agency of the Museum Godefroianum of Hamburg; several novelties from Celebes, collected by Dr. B. Meyer; and some interesting fishes from Tasmania, transmitted by Mr. Morton Allport. Dr. Günther called special attention to the occurrence of many well-known European forms of fishes in the Australian seas, and in explanation of this fact, suggested that these might also occur as deep-sea fishes in the intermediate seas of the tropics.—A paper by Mr. A. Anderson was read, containing notes on the Raptorial Birds of North Western India.—A communication was read from Messrs. G. Stewardson Brady and David Robertson, giving descriptions of two new species of British *Holothuroidea*.—Mr. P. L. Sclater exhibited and described, under the name *Turtur aldebranus*, a specimen of a new species of Dove of the genus *Turtur*, from the coral reef of Aldabra, north of Madagascar. This specimen had been lately living in the Society's Gardens, having been presented by Mr E. Newton.—A paper by Mr. John Brazier, of Sydney, N.S.W., was read, giving descriptions of seven new species of the genus *Helix*, and of two Fluvial Mollusks from Tasmania. A second paper, by Mr. Brazier, contained notes on the specific names of certain Land Shells from the South Sea Islands.—A communication was read from Count Thomas Salvadori, containing a note on *Cerionis caboti*.—A communication was read from Mr. W. T. Blanford giving a description of a new Himalayan Finch, proposed to be called *Procarduelis pubescens*, from Sikim.

Anthropological Institute, November 20.—Sir John Lubbock, Bart., M.P., president, in the chair.—Captain R. T. Burton, late H.M.'s Consul, Damascus, read a paper on "Anthropological Collections from the Holy Land." Captain Burton having unexpectedly returned to England, under the peculiar circumstances now publicly known, travelled to Palmyra from Damascus between April 5 and April 20, 1870, and has brought home specimens of the Palmyrene mummies, the first which have seen the light in England, statuettes, beads, coins, and other articles calculated to throw light upon a subject hitherto left in the gloom of antiquity. On some of the figures described were emblems illustrative of the Phallic and other mysteries, and according with similar reliques found at Nineveh.—Dr. Carter Blake read a long note on the human remains discovered by Captain Burton at Palmyra. These indicated an entirely different race from that which inhabited modern Syria, and the skulls afforded many points of resemblance to the ancient Phœnicians which have been described by other anthropologists. The men were of large stature, in one case reaching probably about 6 feet 4 inches. There were among these remains not one which could be confidently referred to the Hebrew race, a fact on which the author laid stress, without offering any comment. Minute descriptions and measurements of all the specimens were given. Captain Burton will read further papers before the Anthropological Institute, and describe, with topographical notes, the various objects of silex and others which he collected during his 22 months of service in Syria and Palestine.

Entomological Society, November 20.—Mr. A. R. Wallace, president, in the chair. The following gentlemen were elected: Mr. C. V. Riley, State Entomologist for Missouri, as foreign member; Lieutenant B. Lowsley, R.E., and Mr. F. Raine, as ordinary members; and Mr. W. H. Milkin as a subscriber.—With reference to Prof. Westwood's exhibition of *Formica herculanæa* (at the last meeting), found in the crop of a great black woodpecker said to have been shot near Oxford, Mr. Dunning

remarked that, according to information received, several examples of this bird (presumably of foreign origin) were exposed for sale in the London market at the precise time of its supposed occurrence near Oxford. Prof. Westwood had information from Messrs. Robertson and Jackson that it occurred in Devon; the former gentleman affirming that he had repeatedly seen it at Clovelly. Mr. F. Smith was informed that thirty examples had been recorded as British, and that one in particular had been shot by the grandfather of the present Lord Derby. Mr. Jenner Weir reiterated his belief in the species not being British, and Mr. Bond said that every recorded instance had been traced and found to be erroneous, save Lord Derby's example, concerning which doubt existed. Mr. E. Sheppard could not reconcile the occurrence of a gigantic ant, not hitherto known as British, in the crop of a bird, the origin of which was open to doubt, with the idea of the former being an addition to the British Fauna. Mr. McLachlan suggested that Prof. Westwood should visit the locality in which the bird was said to have been shot, and search for the ant. The discussion ended by Prof. Westwood promising to furnish further evidence.—Mr. Bond exhibited small pale examples of *Lasiocampa trifolii*, which appeared to form a distinct race; also females of *Clisiocampa castrensis*, with the wings on one side assuming male characters, without any evidence of gynandromorphism.—Mr. Stainton exhibited a variety of *Agrotis comes* (*Triphena orbona* of collections), captured near Exeter by Mr. Dorville.—Mr. Smith exhibited the cocoons of the American *Tiphia tarda*; these were double, consisting of a flimsy outer casing, and a hard inner cocoon. He expressed his belief that the larvæ of the *Tiphia* devoured those of *Aphodius*. Mr. McLachlan brought before the notice of the meeting an instance of mimetic resemblance between two common North American *Libellulidæ*. The insects in question were *Libellula pulchella* Drury, and *Plathemis trimaculata* De Geer. In the former the sexes were nearly similar in appearance; in the latter very dissimilar, and the female almost precisely resembled that of *Libellula pulchella*. During the discussion which followed, the question was raised as to the liability or non-liability of dragon-flies to the attacks of birds. Mr. F. Smith had seen swallows devouring *Agrotis*, and Mr. Briggs had observed a contest between a sparrow and a large dragon-fly in the streets of London, in which the former was obliged to retreat. It was recommended that American entomologists should observe the habits of these two species, and suggest a reason for the close mimicry existing between them.—Mr. Müller related that he had found the larvæ of a *Thrips* to be destructive to peas, by eating the outside of the green pods.—Mr. McLachlan read notes on the confusion existing in the nomenclature of the common European *Myrmelœonidæ*, in consequence of Linnæus having confounded them in his descriptions.—The publication of a further portion of the proposed general Catalogue of British Insects (*Hymenoptera Aculeata*, by Mr. F. Smith) was announced.

Linnean Society, November 16.—Mr. G. Bentham, president, in the chair.—"On the Floral Structure of *Impatiens fulva*," by A. W. Bennett, F.L.S. The author described the closed "cleistogenous" flowers of this plant, which are far more numerous than the well-known conspicuous flowers, and which produce nearly all the seed-vessels, being abundantly self-fertilised. He suggested that the "cap" formed by the calyx and corolla in these closed flowers is thrown off by the elasticity of the stamens, which are entirely different in structure from those in the conspicuous flowers, the anthers never dehiscent, but the pollen putting out its pollen-tubes while still in the anther, and piercing the wall in order to come into contact with the stigma. In the conspicuous flowers there is a peculiar arrangement in the form of a membrane attached to the stamen-tube, which prevents the access of pollen to the stigma, and as they do not appear to be visited by insects they seldom produce seed-vessels.—"Floræ Hongkongensis Supplementum," by H. F. Hance, Ph.D. In this paper a large number of new species are described, increasing the number included in Bentham's "Flora Hongkongensis" by about one-seventh.

GLASGOW

Geological Society, November 2.—Mr. John Young, vice-president, in the chair. Mr. James Thomson, F.G.S., laid before the meeting some portions of curiously-spotted clay which he had obtained during the recent excavations to the east of the old College of Glasgow. He stated that the occurrence of white spherical spots in the Old Red sandstone, particularly in the neighbourhood of Dumbarton, had often been remarked by the members, and various opinions had been expressed as to the pro-

bable cause of the discolouration. Having observed similar spherical markings in a bed of dull red clay which was being excavated near the old College, he secured several portions of it, which, after drying, split freely and exposed both discoloured spots and lenticular patches similar to those found in the Old Red sandstone referred to. On examination, he observed in the centre of each discoloured spot faint indications of some foreign body, which, on closer scrutiny, proved to be decayed vegetable matter; and on further breaking up the clay, he found the matrix around this vegetable matter always more or less discoloured, while the fibrous or woody matter itself was nearly black. He suggested that the phenomenon was due to the chemical affinity of the oxide of iron in the clay for the constituents of the vegetable matter, and that the discoloured spots in the red sandstone might be due to a similar cause, though no trace remained of the organism by which they were occasioned.

DUBLIN

Royal Geological Society, November 8.—Edward Hull, M.A., F.R.S., Director of the Geological Survey of Ireland, in the chair. G. H. Kinahan, M.R.I.A., read a paper on the Coal Measures of Ireland. This paper was in reply to some statements made by Mr. Hull at a former meeting of the Society in regard to the work of the late Mr. J. B. Jukes and his colleagues. Mr. Hull had stated that, while true Coal Measures existed in Connaught, there were none in either Leinster or Munster. The author argued that this assertion was quite erroneous, and that the Coal Measures of these three provinces were identical. Mr. Hull, in reply, seemed to argue that the lower Measures in Munster and Leinster were very similar to the so-called Yoredale rock and millstone grits of England, but acknowledged the general correctness of the maps published under Mr. Jukes' direction. Rev. Dr. Haughton moved that Mr. Kinahan's paper be published, and expressed his belief that all such subjects were much better discussed on published data.—Rev. Dr. Haughton F.R.S., read a note from Mr. Richardson, secretary to G. R. Graves, M.P., of Liverpool, informing him that the *Neptune*, Captain Edwards, had just put in from Quebec, and that the Captain reported that on the 12th October, at sea, in lat. 46° N., long. 35° W., at about 4 P.M., blowing strong from W., he observed a dense cloud of fog arise on the western horizon, which gradually came up with and surrounded the vessel, and so continued until midnight. From first coming up with the ship until clearing off, there prevailed a very strong smell of burning wood, both the Captain and crew felt their eyes much irritated by the smoke, and the decks were strewn with fine dust. At the time the ship was more than 2,000 miles from Chicago.—Prof. Macalister exhibited for the President, Lord Enniskillen, the skull of *Ursus ferox* found in the County of Monaghan.

Royal Irish Academy, November 13.—The President, Rev. Dr. Jellett, in the chair.—Dr. Whitley Stokes read a paper "On the *Péire* of Oengus." This ancient Irish MS., of which Dr. Stokes presented a translation to the Academy, although it, he said, was of but little literary merit, possessed from the purity of its vocabulary considerable value to the student of comparative philology, revealing very fully the position which the Celtic occupied in the great Aryan family of languages. Dr. Stokes illustrated his views by the comparison of many words with their cognate forms in Greek, Latin, Sanscrit, &c. He also explained the structure of the metre in the poem, and mentioned the several copies of the MS. in existence.—Prof. R. Ball read a paper, written by his brother, Valentine Ball, B.A., of the Geological Survey of India, "On the Andaman Islands," in which he gave a short account of a visit to the "Home" at Mount Augusta, which he made in company with Mr. Humfrey, who is the superintendent of the Home, and Dr. Curran.—Prof. Ball read a paper "On a Geometrical Study of the Kinematics, Equilibrium, and small Oscillations of a Rigid Body."—G. H. Kinahan read a paper "On the Granitic and other Ingenite Rocks of the Mountainous track of Country west of Loughs Mask and Corrib." The term Ingenite he adopted from David Forbes.—

PARIS

Academy of Sciences, November 13.—M. Dumas noticed the loss which the Academy had sustained in the death of its foreign associate, Sir Roderick Murchison, of whom he spoke in high terms.—M. F. du Moncel read a note on the most economical arrangement of voltaic piles with respect to their polar electrodes, in continuation of a former note.—M. Faye presented a note on the spectroscopic measurement of the rotation of the sun by means of Dr. Zöllner's reversion spectroscope, in which he stated

that Dr. Vogel of Bothkamp, near Kiel, had succeeded in effecting this measurement, and ascertained a velocity of rotation of 2,497 metres per second.—M. Faye also communicated a memoir on the law of rotation of the sun, in reply to a reclamation by Father Secchi, and a memoir by Dr. Zöllner; in this he indicated the reasons which led him to the belief that the sun is a gaseous body.—M. Le Verrier announced that but few meteors had been observed in France on the night of the 12-13th November.—M. Phillips read a paper on the governing spiral of chronometers.—M. H. Resal presented a note on the movement of a material system referred to three rectangular axes capable of moving around their origin.—General Morin communicated a memoir by M. Tresca on the results of experiments of flexion made upon steel and iron rails beyond the limit of elasticity.—A note by M. W. de Fonvielle was read relating to an observation made by M. Janssen on the stoppage of the rotation of the car of a balloon.—MM. Becquerel presented a memoir on the temperature of soils covered with low vegetation or denuded. The observations were made at various depths below the surface, from five to sixty centimetres, and showed that the mean temperature during the months of August, September, and October is lower under a denuded surface than under one covered with herbage.—M. C. Sainte-Claire Deville noticed the observation of faint aurora borealis in France on the evening of the 9th November.—A memoir, entitled "Thermic Investigation on Crystalline Dissociation," by MM. P. A. Favre and C. A. Valsen, was read. The authors remarked upon the variety of phenomena involved in the solution of a crystalline salt in water, which they proposed to study from the thermo-chemical point of view, and tabulated and discussed the results of the solution of a long series of crystalline salts, chiefly sulphates.—M. E. P. Bérard presented a note on the *salami*, or saline crust, which is formed on the shores of the Mediterranean upon certain unproductive soils. Common salt is the chief ingredient in this crust.—M. Berthelot communicated a continuation of his memoir on the formation of precipitates, in which he discussed the thermal phenomena associated with the separation of the acid of salts from the base.—M. Maumené presented a note calling attention to the fact that he had some years ago indicated the possibility of the slow transformation of cane sugar into glucose.—M. J. Decaisne communicated some observations on the Pomaceæ, the chief object of which was to indicate the characters by which this important group of plants may be divided into good natural genera.—M. Bossin and M. Baudet communicated suggestions for the destruction of *Phylloxera vastatrix*.—M. Claude Bernard presented a note by M. Ranvier, on the Histology and Physiology of the Peripheral Nerves.—M. Milne-Edwards presented a note on *Oncidium celticum*, by M. L. Vallant, in which the author described the anatomy of that curious gasteropod, and expressed the opinion that although rightly placed among the Pulmonata, it presents certain affinities with the Opisthobranchiate mollusca.—M. de Quatrefages communicated a note by M. E. Perrier on *Eudrilus*, a new genus of Lumbricina from the West Indies.—M. Ménè presented some investigations on the fat of domestic animals.

November 20.—A paper was read by M. de Saint-Venant on the mechanics of ductile bodies.—M. H. Resal presented a memoir on the movement of a point subjected to the action of a periodical cause, which experiences a constant resistance directed in the inverse direction of the velocity; M. C. Rozé a note on the asymmetry of the terminal curves of the spiral spring of chronometers; and M. de Saint-Venant a memoir by M. J. Boussinesq on the theory of the undulations and movements which are propagated along a rectangular horizontal canal when there is communicated to the liquid contained in this canal like velocities from the surface to the bottom.—M. Yvon Villarcéau communicated extracts from a letter from Mr. Gould relating to the establishment of an Observatory at Cordoba in the Argentine Republic.—M. Le Verrier communicated a note giving the results of observations of meteors made in France on the 12th, 13th, and 14th November. Those observed on the 12th and 13th issued from a point in the neighbourhood of the constellation Auriga; the "Leonides" or meteors issuing from Leo were most numerous on the night of the 14th. M. Faye made some remarks on this communication, and to these M. Le Verrier replied.—M. Chapelas also presented a note on the meteors of November 1871.—M. Le Verrier presented a note by M. de Gasparis on the formulæ for calculating the orbits of double stars.—M. P. A. Favre read a continuation of his thermic investigations upon electrolysis, in which he discussed the thermic phenomena observed during the electrolysis of sulphate of copper, sulphate of zinc, nitrate of copper,

and mixtures of neutral sulphates of zinc and copper with sulphate of hydrogen.—M. Elie de Beaumont made some remarks upon the Mont Cenis tunnel, and read a letter from Father Secchi on the pendulum experiments which it is proposed to make in the tunnel.—M. J. Bourget presented a paper on the velocity of sound in sonorous tubes.—M. Jamin communicated a note by M. E. Gripon on the transverse vibrations of wires and thin plates, and also a note by M. Alvergnyat on a new phenomenon of phosphorescence produced by frictional electricity. According to the latter a small quantity of chloride or bromide of silicium hermetically sealed in a vacuum tube gives a bright luminosity when the tube is rubbed with a piece of silk. The chloride gives a rose colour, the bromide a greenish yellow.—M. Le Verrier presented a note on the history of the observations on the action of ecliptic conjunctions upon the elements of terrestrial magnetism, by M. Moise Lion.—M. Le Verrier also presented a note by M. Tarry, giving an account of an aurora borealis observed at Brest on the 9th November, in which the author noticed particularly the perturbations manifested by the apparatus employed in telegraphy.—M. Le Verrier also remarked that auroras had been observed in Piedmont on the nights of the 2nd, 9th, 10th, and 15th November, and referred to the coincidence between the occurrence of these phenomena and the November flight of meteors, which M. C. Sainte-Claire Deville supposed to exist.—M. Berthelot read the conclusion of his paper on the formation of precipitates. In this he discussed the changes which take place in the state of aggregation of precipitates, illustrating his views by the facts observed in the cases of the carbonates of strontia, baryta, lead, and silver, and of the oxalates.—M. Wurtz presented a note by M. E. Ritter on the transformation of albuminoid matters into urea by permanganate of potash. This note contained an experimental confirmation of M. Béchamp's statement.—M. de Quatrefages communicated an extract from a letter by M. E. S. Delidon, on the butts of Saint-Michel-en-l'Herm, and on the means by which their elevation above the sea, and other local elevations, may have been effected. He considers that local elevations may be due to infiltration of fresh and salt water.—Mr. E. Blanchard presented a note by M. S. Jourdain on the anatomy of the sunfish (*Orthogoriscus mola*).—An extract of a letter from M. A. Poëy to M. Elie de Beaumont, on the influence of violet light upon the growth of the vine, pigs, and cattle, was read.—M. de Quatrefages presented a note by M. F. Garrigou on lacustrine habitations in the Pyrenean region of the South of France. In this note the author describes the results obtained by him in the investigation of the deposits of ancient lakes at the foot of the Pyrenees.

BOOKS RECEIVED

ENGLISH.—Beeton's Medical Dictionary (Ward, Lock, and Tyler).
 FOREIGN.—Anales del Museo publico de Buenos Aires; Entrega octava: por German Burmeister (Paris, Savv). (Through Williams and Norgate).—Beiträge zur Parthenogenesis der Arthropoden: von Siebold.—Lehrbuch der chemischen u. physikalischen Geologie: G. Bischof.—Untersuchung des Weges eines Lichtstrahls durch eine beliebige Anzahl von brechenden sphärischen Oberflächen: P. A. Hansen.—Die Arachniden Australiens nach der Natur beschrieben und abgebildet: Dr. L. Koch.

PAMPHLETS RECEIVED

ENGLISH.—On the Formation of the Cirques of Brittany: Rev. T. G. Bonney.—Law of Husband and Wife: Philofamilias.—The Obstacles to Science Teaching in Schools: Rev. W. Tuckwell.—Educational Hospital Reform: T. J. Boyd.—Report of Science and Art Department of the Committee of Council on Education, South Kensington.—Directory, with Regulations for Establishing and Conducting Science Schools.—Directory, with Regulations, and a Review: W. Robinson.—Cases of Diarrhoea: Dr. Chapman.—Apprenticeship to the Sea Service; a Circular of the Board of Trade.—Proceedings of the Bristol Naturalists' Society, Vol. iv., part 1.—Glaciation of the North-west of England: C. E. De Rance.—Cholera and Disinfection: Asiatic Cholera in Bristol in 1866: Dr. Budd.—Primary Schools and the Difficulty of Spelling: E. Jones.—On the Effect of Small Variations of Temperature on Steel Magnets: Gordon and Newall.—Prize Medals of the Royal Geographical Society.—General Representation on a Complete Readjustment and Modification of Mr. Harle's Scheme: A. E. Dobbs.—Reply to John Hampden's Charges against Mr. Wallace.—The Variations at Different Seasons of a *Hieracium*: Prof. Balfour.—Quarterly Journal of Education, October.—Fifteenth Annual Report of the Medical Officer of Health of St. James's.—On the Pre-glacial Geography of Northern Cheshire: C. E. De Rance.—Man contemplated Physically, Morally, Intellectually, and Spiritually: J. W. Jackson.—Introductory Lecture on Experimental Physics: J. Clerk Maxwell.—On Ocean Currents: J. K. Laughton.

AMERICAN AND COLONIAL.—On the Constitution of the Solid Crust of the Earth: Archdeacon Pratt.—On the Direction and Force of the Wind: F. C. Loomis.—Influence of Temperature: F. C. Loomis.—Thoughts on the Higher Education of Women: Principal Dawson.—Papers and Proceedings of the Royal Society of Tasmania, 1871.—Monthly Notices of the Royal Society of Tasmania, 1871.—Reports of the Mining Surveyors and Registrars, Victoria,

June 30, 1871.—Victoria; Patents and Patentees, Vol. iv.: W. H. Archer.—Victoria; Seventh Report of the Board of Visitors to the Observatory.—Lessons on Population, suggested by Grecian and Roman History: Dr. N. Allen.—An Address delivered at the Annual Exhibition of the Farmers' Club, Princeton: Dr. N. Allen.—On the Inter-marriage of Relations: Dr. N. Allen.—Remarks on the Relations of Anomia: E. S. Morse.—Correspondence on the subject of Atmospheric Electricity: Seth Boyden.—Spectroscopic Notes: Prof. C. A. Young.

FOREIGN.—Medizinische Jahrbücher, 1870: S. Stricker.—On the Diurnal Variation of the Inclination of the Magnet at Batavia: P. A. Bergmann.—On the Lunar Atmospheric Tide at Batavia: P. A. Bergmann.—Bulletin de la Société d'Anthropologie de France, Tome v.—Studi sopra un lignaggio anemofilo delle composte ossia sopra il gruppo delle Artemisiacee: Delpino.—Zeitschrift des oesterreichischen Gesellschaft für Meteorologie, Band vi., Nos. 14–22.

DIARY

THURSDAY, November 30.

ROYAL SOCIETY, at 4.—Anniversary Meeting.
 SOCIETY OF ANTIQUARIES, at 8.30.—Notes on an Example of Alamannic Phalare: W. M. Wylie, F.S.A.—On an Early French Deed (A.D. 1397) Relating to the Knights of Saint John of Jerusalem: C. K. Watson, M.A.

FRIDAY, December 1.

GEOLOGISTS' ASSOCIATION, at 8.—On the Glacial Drifts of North London: H. Walker.
 ARCHÆOLOGICAL INSTITUTE, at 4.

SUNDAY, December 3.

SUNDAY LECTURE SOCIETY, at 4.—The Coast Line and its Teachings: Dr. T. Spencer Cobbold, F.R.S.

MONDAY, December 4.

ENTOMOLOGICAL SOCIETY, at 7.
 ANTHROPOLOGICAL INSTITUTE, at 8.—Anthropological Collections from the Holy Land. No. 11.: Captain Richard F. Burton, F.R.G.S.—On a Collection of Flint Implements from the Cape of Good Hope: Prof. Busk, F.R.S., and Rev. Mr. Dale.
 VICTORIA INSTITUTE, at 8.—The Serpent Myths of Ancient Egypt: W. R. Cooper.
 LONDON INSTITUTION, at 4.—The Physiology of Bodily Motion and Consciousness (VI.): Prof. Huxley, F.R.S.
 ROYAL INSTITUTION at 2.—General Monthly Meeting.

TUESDAY, December 5.

ZOOLOGICAL SOCIETY, at 9.—On the Freshwater Silurids of India and Burmah: Surgeon Francis Day, F.Z.S.—On a Small Collection of Butterflies from Angola: A. G. Butler.—Description of a New Genus of Lepidoptera, allied to *Apature*: A. G. Butler.
 SOCIETY OF BIBLICAL ARCHÆOLOGY, at 8.30.

WEDNESDAY, December 6.

GEOLOGICAL SOCIETY, at 8.
 SOCIETY OF ARTS, at 8.—On Sewage as a Fertiliser of Land, and Land as a Purifier of Sewage: J. Bailey Denton.
 MICROSCOPICAL SOCIETY, at 8.—On Microscopic Uredines: M. C. Cooke, M.A.

THURSDAY, December 7.

ROYAL SOCIETY, at 8.30.
 SOCIETY OF ANTIQUARIES, at 8.30.
 CHEMICAL SOCIETY, at 8.
 LINNEAN SOCIETY, at 8.—Botany of the Grant and Speke Expedition: Lieut.-Col. Grant, C.B., C.S.I.—On a hybrid *Vaccinium* between the Bilberry and Crowberry: R. Garner, F.L.S.—On the Formation of British Pearls, and their possible improvement: R. Garner, F.L.S.

CONTENTS

	PAGE
ARCTIC EXPLORATION. By C. R. MARKHAM, F.R.G.S.	77
ORD'S NOTES ON COMPARATIVE ANATOMY. By Dr. P. H. PYE-SMITH.	79
OUR BOOK SHELF	80
LETTERS TO THE EDITOR:—	
Instruction in Science for Women.—F. E. KITCHENER	81
True and Spurious Metaphysics.—Prof. P. G. TAIT, F.R.S.	81
"Wormell's Mechanics."	81
Solar Halo.—Prof. A. S. HERSCHEL, F.R.A.S. (With Illustration)	81
Paraselenae.—T. MCK. HUGHES, F.G.S. (With Illustration)	82
The Solar Parallax.—RICH. A. PROCTOR, F.R.A.S.	83
The Density and Depth of the Solar Atmosphere	83
An Aberrant Foraminifer.—W. JOHNSON SOLLAS. (With Illustration)	83
"New Original Observation"	83
New Zealand Forest-Trees.—W. DAVISON	84
The Food of Plants.—CUTHBERT C. GRUNDY	84
The Germ Theory of Disease.—GEORGE DAWSON	84
The Origin of Species'	84
NEW VOLCANO IN THE PHILIPPINES. By WM. W. WOOD	84
SPECTROSCOPIC NOTES. By Prof. C. A. YOUNG, Ph.D. (With Illustrations.)	85
NOTES	88
COLDING ON THE LAWS OF CURRENTS IN ORDINARY CONDUITS AND IN THE SEA. II.	90
SCIENCE IN GERMANY	92
SCIENTIFIC SERIALS	92
SOCIETIES AND ACADEMIES	93
BOOKS AND PAMPHLETS RECEIVED	96
DIARY	96

ERRATUM.—P. 63, col. 1, lines 19, 18, 16 from bottom, for "linean" read "lineal."